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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/907,687	08/08/1997	MARC J. SABOURIN	AZNDR/346/US	8583

7590 08/28/2002
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HARTFORD, CT 061032721

EXAMINER

ALVO, MARC S

ART UNIT	PAPER NUMBER
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1731

33

DATE MAILED: 08/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

08/907,687

Applicant(s)

SABOURIN, MARC J.

Examiner

Steve Alvo

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,7,23-27,29 and 31-40 is/are pending in the application.
- 4a) Of the above claim(s) 15-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,7,23-27,29 and 31-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 32. 6) ☐ Other: _____

Art Unit: 1731

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 29, 2, 23-26, 31, 32 and 34 are rejected under 35 U.S.C. 103(a) as obvious over CEDERQUIST et al with or without PRUSAS et al or EP 0 034 560 or MINTON.

CEDERQUIST et al teaches conditioning lignocellulosic fiber material (2) with saturated steam (17) at a temperature of 100 °C which would have a corresponding steam pressure of 15 psi, compressing the material (3) under the same steam conditions, e.g. 100 °C and 15 psi, to remove water to a dryness of at least 50%, subsequent to the step of compressing preheating the material in an environment of saturated steam at a temperature of 130-200 °C (6,7), having corresponding pressure of 3-16 kgs/cm² or 42-228 psi, and immediately following the preheating refining the material to form a pulp. It is noted that the instant process can operate at pressures as low as 10 psi (see specification, page 3, line 15). A temperature of 200 °C would be above the glass transition temperature. It would obvious to use a compression ratio necessary to obtain the desired moisture in the pulp. It is well known that higher temperatures and pressures reduce reaction times. It would have been obvious to increase the pressure and temperature of the conditioning step to reduce the treatment time. Applicant uses the same type of apparatus to

Handwritten notes:
 steam temp 39 24 psi 206°F - 292°F
 42-228 psi = 27-213 psi

Art Unit: 1731

compress and destructure the fibers, e.g. a screw press, used by CEDERQUIST et al. The “destructuring the fibers without significant breakage across grain boundaries” is a direct result of the “conditioning” of the fibers. The same “conditioning” is taught by the applied art. At best Applicant is optimizing the “conditioning” of the prior art. There is a reasonable expectation that the conditioning of the prior art would yield a feed material having the desired amount of destructuring. *In re O'Farrel*, 7 USPQ2d 1673, 1680-81. In any event, it is well settled that an artisan with ordinary skill would have found it obvious to determine workable or even optimum values for an art recognized, result effective parameter, such as the proper amount of compression, *In re Boesch*, 205 USPQ 215, 219; *In re Aller*, 105, USPQ 233, 235. If the compression ratio is not obvious over CEDERQUIST et al, then the use of a compression ratio of at least 4:1 is taught by PRUSAS et al (column 4, lines 41-43 and column 8, lines 17-23) or EP 0 034 560 or MINTON. It would have been obvious to compress the material of CEDERQUIST et al in the manner taught by PRUSAS et al or EP 0 034 560 (column 3, lines 21-23) or MINTON (column 3, lines 17-24) to prepare the fibers for refining by reducing the moisture content and/or destructuring the fibers. It would have been especially obvious to use higher presteaming temperatures, e.g. above 100 deg. C, and higher corresponding steam pressures, as such is taught by PRUSAS (column 4, lines 41-49). Thermo-mechanical pulp (TMP) is produced in a thermo-mechanical process where wood particles are softened by steam before entering a pressurised refiner. This does not differ from the process of CEDERQUIST. Thus CEDERQUIST is a TMP process which performs the same 3 steps as the instant process. Applicant has not compared the instant process to the process of CEDERQUIST. Example 1 of the specification compares a single high temperature preheating stage to a process with a low temperature preheating stage.

Art Unit: 1731

This is not the closest prior art. CEDERQUIST teaches the same low temperature-high temperature (e.g. above glass transition temperature) treatment disclosed by Applicant. The second pretreatment stage of CEDERQUIST teaches using temperatures above 100 °C, preferably temperatures of 130-200 °C (CEDERQUIST, column 2, lines 19-20, column 3, lines 22-23 and last 2 lines). Besides the claims are not commensurate in scope the Example. For example, a temperature of 128 °C has not been claimed.

Claims 7, 27, 33 and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over CEDERQUIST et al with or without PRUSAS et al or MINTON as applied to claim 29 above, and further in view of EP 0 034 560.

EP 0 034 560 teaches pretreating the lignocellulosic material with steam prior to compression and refining in the same manner taught by CEDERQUIST et al. CEDERQUIST et al is silent as to the time of treatment, while EP 0 034 560 teaches steam pretreatment using the same temperature 100 °C and pressure atmospheric as CEDERQUIST et al. It would have been obvious to use the same time for pretreatment for CEDERQUIST et al as taught by EP 0 034 560, e.g. 60 seconds (page 5, line 4) as they are performing the same steam pretreatment.

Claim 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over CEDERQUIST et al with or without PRUSAS et al or MINTON as applied to claim 29 above, and further in view of LUNAN et al.

LUNAN et al teaches that higher pressures can be used during presteaming in a TMP process by using short steaming times, e.g. 16 seconds or lower. It would have been obvious to the routineer that the treatment times in the presteaming stages of CEDERQUIST could be

Art Unit: 1731

shortened to 16 seconds or less, by increasing the pressure and temperature during the presteaming stages.

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Any inquiry concerning this communication or earlier communications from the **primary examiner** should be directed to **Steve Alvo** whose telephone number is **(703) 308-2048**. The Examiner can normally be reached on Monday - Friday from **6:00 AM - 2:30 PM (EST)**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Steve Griffin, can be reached on 703-308-1164.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **Group receptionist** whose telephone number is **703-308-0661**.

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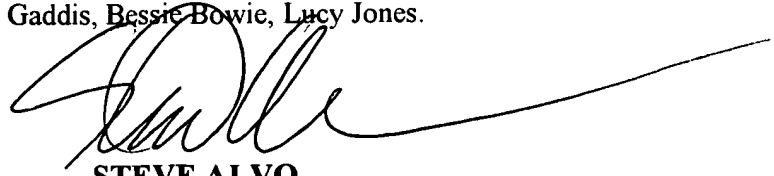
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Art Unit: 1731

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MSA
8/26/02



STEVE ALVO
PRIMARY EXAMINER
ART UNIT 1731